

JAN 13 2003



3/17

9 18 27 36 45 54  
CTC GAG ATG CAG AGG AAC CTG GGA GCT GTG CTG GGG ATT CTG TGG GTG CAG ATT [SEQ ID NO: 1]  
-----  
L E M Q R N L G A V L G I L W V Q I [SEQ ID NO: 2]  
  
63 72 81 90 99 108  
TGC TGG CTG AAA GAA CAG CAA GTG CAG CAG AGT CCC GCA TCC TTG GTT CTG CAG  
-----  
C W L K E Q Q V Q Q S P A S L V L Q  
  
117 126 135 144 153 162  
GAG GGG GAG AAC GCA GAG CTC CAG TGT AGC TTT TCC ATC TTT ACA AAC CAG GTG  
-----  
E G E N A E L Q C S F S I F T N Q V  
  
171 180 189 198 207 216  
CAG TGG TTT TAC CAA CGT CCT GGG GGA AGA CTC GTC AGC CTG TTG TAC AAT CCT  
-----  
Q W F Y Q R P G G R L V S L L Y N P  
  
225 234 243 252 261 270  
TCT GGG ACA AAG CAG AGT GGG AGA CTG ACA TCC ACA ACA GTC ATT AAA GAA CGT  
-----  
S G T K Q S G R L T S T T V I K E R  
  
279 288 297 306 315 324  
CGC AGC TCT TTG CAC ATT TCC TCC TCC CAG ATC ACA GAC TCA GGC ACT TAT CTC  
-----  
R S S L H I S S S Q I T D S G T Y L

FIG. 3A

JAN 13 2003

PATENT & TRADEMARK OFFICE

CHIEF FINANCIAL OFFICER (CFO) - DPP

4/17

333            342            351            360            369            378  
TGT GCC TCA AAT TCT GGA GGA AGC AAT GCA AAG CTA ACC TTC GGG AAA GGC ACT  
-----  
C A S N S G G S N A K L T F G K G T  
  
387            396            405            414            423            432  
AAA CTC TCT GTT AAA TCA GGT GGC GGA GGG TCT GGC GGG GGT GGA TCC GGG GGT  
-----  
K L S V K S G G G S G G G G S G G  
  
441            450            459            468            477            486  
GGA GGC TCA GAG GCT GCA GTC ACC CAA AGC CCA AGA AAC AAG GTG GCA GTA ACA  
-----  
G G S E A A V T Q S P R N K V A V T  
  
495            504            513            522            531            540  
GGA GGA AAG GTG ACA TTG AGC TGT AAT CAG ACT AAT AAC CAC AAC AAC ATG TAC  
-----  
G G K V T L S C N Q T N N H N N M Y  
  
549            558            567            576            585            594  
TGG TAT CGG CAG GAC ACG GGG CAT GGG CTG AGG CTG ATC CAT TAT TCA TAT GGT  
-----  
W Y R Q D T G H G L R L I H Y S Y G  
  
603            612            621            630            639            648  
GCT GGC AGC ACT GAG AAA GGA GAT ATC CCT GAT GGA TAC AAG GCC TCC AGA CCA  
-----  
A G S T E K G D I P D G Y K A S R P

**FIG. 3B**



NUCLEIC ACID POLYMERASE POLYMERIZING PROTEIN

5/17

To:

657            666            675            684            693            702  
AGC CAA GAG AAC TTC TCC CTC ATT CTG GAG TTG GCT ACC CCC TCT CAG ACA TCA  
---  
S Q E N F S L I L E L A T P S Q T S  
  
711            720            729            738            747            756  
GTG TAC TTC TGT GCC AGC GGT GAG ACA GGG ACC AAC GAA AGA TTA TTT TTC GGT  
---  
V Y F C A S G E T G T N E R L F F G  
  
765            774            783            792            801            810  
CAT GGA ACC AAG CTG TCT GTC CTG ACT AGT AAC TCC ATC ATG TAC TTC AGC CAC  
---  
H G T K L S V L T S N S I M Y F S H  
  
819            828            837            846            855            864  
TTC GTG CCG GTC TTC CTG CCA GCG AAG CCC ACC ACG ACG CCA GCG CCG CGA CCA  
---  
F V P V F L P A K P T T T P A P R P  
  
873            882            891            900            909            918  
CCA ACA CCG GCG CCC ACC ATC GCG TCG CAG CCC CTG TCC CTG CGC CCA TCT AGT  
---  
P T P A P T I A S Q P L S L R P S S  
  
927            936            945            954            963            972  
TCT AGA GAT CCC AAA CTC TGC TAC CTG CTG GAT GGA ATC CTC TTC ATC TAT GGT  
---  
S R D P K L C Y L L D G I L F I Y G

**FIG. 3C**



RECENT PROGRESSION OF THE PESTICIDE TOLERANCE  
AND THE POLYMERASE CHAIN REACTION

6/17

16

981	990	999	1008	1017	1026
GTC ATT CTC ACT GCC TTG TTC CTG AGA GTG AAG TTC AGC AGG AGC GCA GAC GCC					
-----					
V I L T A L F L R V K F S R S A D A					
1035	1044	1053	1062	1071	1080
CCC GCG TAC CAG CAG GGC CAG AAC CAG CTC TAT AAC GAG CTC AAT CTA GGA CGA					
-----					
P A Y Q Q G Q N Q L Y N E L N L G R					
1089	1098	1107	1116	1125	1134
AGA GAG GAG TAC GAT GTT TTG GAC AAG AGA CGT GGC CGG GAC CCT GAG ATG GGG					
-----					
R E E Y D V L D K R R G R D P E M G					
1143	1152	1161	1170	1179	1188
GGA AAG CCG AGA AGG AAG AAC CCT CAG GAA GGC CTG TAC AAT GAA CTG CAG AAA					
-----					
G K P R R K N P Q E G L Y N E L Q K					
1197	1206	1215	1224	1233	1242
GAT AAG ATG GCG GAG GCC TAC AGT GAG ATT GGG ATG AAA GGC GAG CGC CGG AGG					
-----					
D K M A E A Y S E I G M K G E R R R					
1251	1260	1269	1278	1287	1296
GGC AAG GGG CAC GAT GGC CTT TAC CAG GGT CTC AGT ACA GCC ACC AAG GAC ACC					
-----					
G K G H D G L Y Q G L S T A T K D T					
1305	1314	1323	1332		
TAC GAC GCC CTT CAC ATG CAG GCC CTG CCC CCT CGC TAA					
-----					
Y D A L H M Q A L P P R *					

FIG. 3D

JAN 13 2003

PATENT & TRADEMARK OFFICE  
U.S. DEPARTMENT OF COMMERCE

11/17

9            18            27            36            45            54            [SEQ ID NO: 43]  
ATG AAA TCC TTG AGT GTT TCC CTA GTG GTC CTG TGG CTC CAG TTA AAC TGG GTG  
-----  
Met Lys Ser Leu Ser Val Ser Leu Val Val Leu Trp Leu Gln Leu Asn Trp Val            [SEQ ID NO: 44]  
  
63            72            81            90            99            108  
CAG AGC CAG CAG AAG GTG CAG CAG AGC CCA GAA TCC CTC AGT GTC CCA GAG GGA  
-----  
Gln Ser Gln Gln Lys Val Gln Gln Ser Pro Glu Ser Leu Ser Val Pro Glu Gly  
  
117            126            135            144            153            162            [SEQ ID NO: 45]  
GGC ATG GCC TCT CTC AAC TGC ACT TCA AGT GAT CGC AAT TTT CAG TAT TTC TGG  
-----  
Gly Met Ala Ser Leu Asn Cys Thr Ser Ser Asp Arg Asn Phe Gln Tyr Phe Trp  
  
171            180            189            198            207            216            [SEQ ID NO: 46]  
TGG TAC AGA CAG CAT TCT GGA GAA GGC CCC AAA GCA CTG ATG TCC ATC TTC TCT  
-----  
Trp Tyr Arg Gln His Ser Gly Glu Gly Pro Lys Ala Leu Met Ser Ile Phe Ser

**FIG. 7A**

JAN 13 2003

PATENT & TRADEMARK OFFICE

12/17

225            234            243            252            261            270  
GAT GGT GAC AAG AAA GAA GGC AGA TTC ACA GCT CAC CTC AAT AAG GCC AGC CTG  
-----  
Asp Gly Asp Lys Lys Glu Gly Arg Phe Thr Ala His Leu Asn Lys Ala Ser Leu

279            288            297            306            315            324  
CAT GTT TCC CTG CAC ATC AGA GAC TCC CAG CCC AGT GAC TCC GCT CTC TAC TTC  
-----  
His Val Ser Leu His Ile Arg Asp Ser Gln Pro Ser Asp Ser Ala Leu Tyr Phe

333            342            351            360            369            378  
TGT GCA GTT ATG GAT TAT AAC CAG GGG AAG CTT ATC TTT GGG CAG GGT ACC AAG  
-----  
Cys Ala Val Met Asp Tyr Asn Gln Gly Lys Leu Ile Phe Gly Gln Gly Thr Lys

387  
TTA TCT ATC AAG CCC 3'  
-----  
Leu Ser Ile Lys Pro

**FIG. 7B**

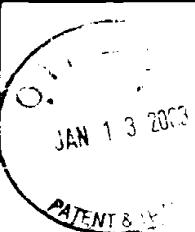
O 1  
JAN 13 2003

PATENT & TRADEMARK OFFICE

13/17

9 18 27 36 45 54 [SEQ ID NO: 45]  
ATG GGC TCC AGA CTC TTC TTT GTG GTT TTG ATT CTC CTG TGT GCA AAA CAC ATG  
-----  
Met Gly Ser Arg Leu Phe Phe Val Val Leu Ile Leu Leu Cys Ala Lys His Met [SEQ ID NO: 46]  
  
63 72 81 90 99 108  
GAG GCT GCA GTC ACC CAA AGT CCA AGA AGC AAG GTG GCA GTA ACA GGA GGA AAG  
-----  
Glu Ala Ala Val Thr Gln Ser Pro Arg Ser Lys Val Ala Val Thr Gly Gly Lys  
  
117 126 135 144 153 162  
GTG ACA TTG AGC TGT CAC CAG ACT AAT AAC CAT GAC TAT ATG TAC TGG TAT CGG  
-----  
Val Thr Leu Ser Cys His Gln Thr Asn Asn His Asp Tyr Met Tyr Trp Tyr Arg  
  
171 180 189 198 207 216  
CAG GAC ACG GGG CAT GGG CTG AGG CTG ATC CAT TAC TCA TAT GTC GCT GAC AGC  
-----  
Gln Asp Thr Gly His Gly Leu Arg Leu Ile His Tyr Ser Tyr Val Ala Asp Ser

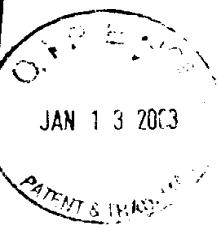
**FIG. 7C**



14/17

225	234	243	252	261	270
ACG GAG AAA GGA GAT ATC CCT GAT GGG TAC AAG GCC TCC AGA CCA AGC CAA GAG					
-----					
Thr Glu Lys Gly Asp Ile Pro Asp Gly Tyr Lys Ala Ser Arg Pro Ser Gln Glu					
279	288	297	306	315	324
AAT TTC TCT CTC ATT CTG GAG TTG GCT TCC CTT TCT CAG TCA GCT GTA TAT TTC					
-----					
Asn Phe Ser Leu Ile Leu Glu Leu Ala Ser Leu Ser Gln Ser Ala Val Tyr Phe					
333	342	351	360	369	378
TGT GCC AGC AGC GAT TTC GCC GGG ACA GGG GGC TTC TAT GAA CAG TAC TTC GGT					
-----					
Cys Ala Ser Ser Asp Phe Ala Gly Thr Gly Phe Tyr Glu Gln Tyr Phe Gly					
387	396				
CCC GGC ACC AGG CTC ACG GTT TCT 3'					
-----					
Pro Gly Thr Arg Leu Thr Val Ser					

**FIG. 7D**



15/17

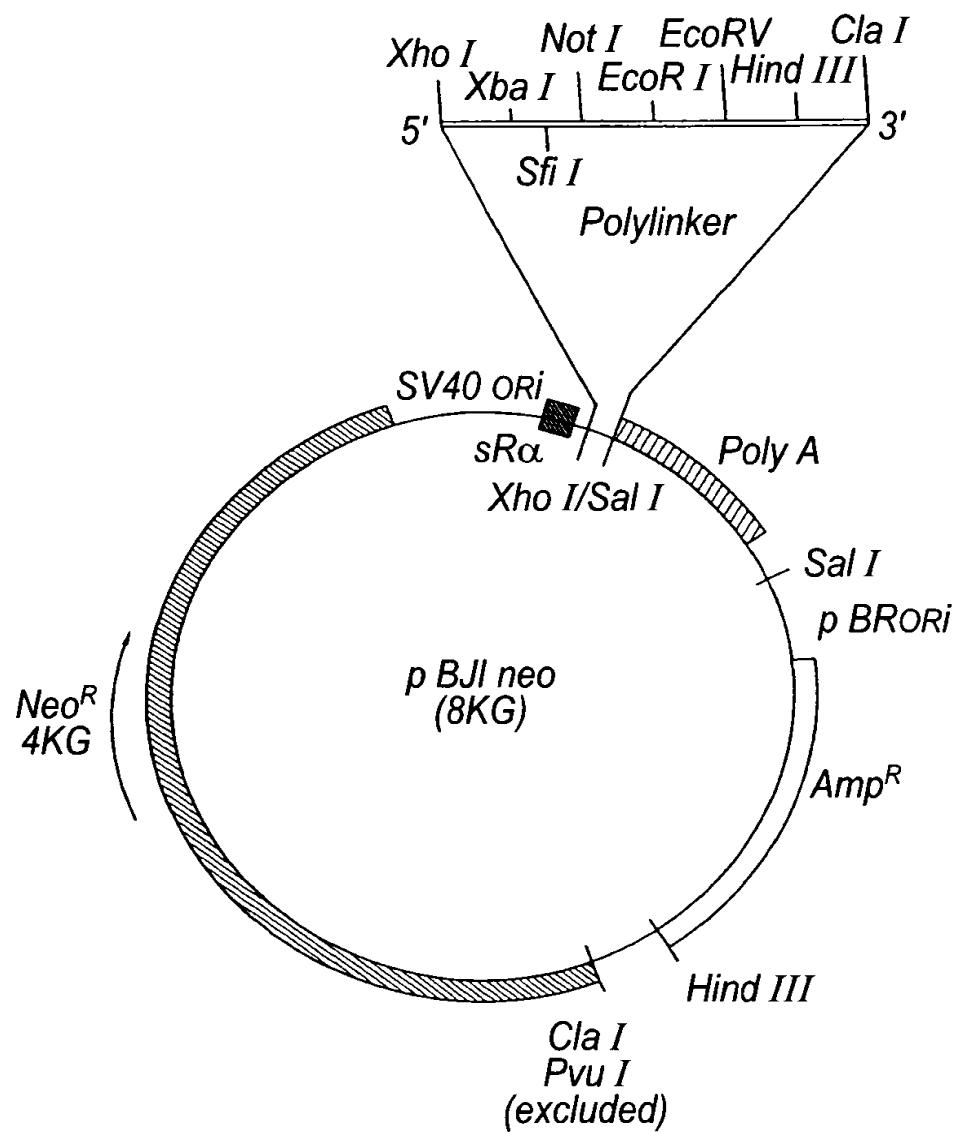


FIG. 8